

What is claimed is:

1. A system for component-based processing, said system comprising:

- 5 a component specification element;
 a control flow specification element;
 a data flow specification element;
 a resource specification element; and
 a quality of service specification derivation element

10 having for output an application model in combination with a
 quality of service specification derived by implication from
 relations between components, control flows, data flows and
 resources;

15 wherein said quality of service specification is made
 available to a runtime engine for deployment as a runtime
 contract in a runtime processing environment.

20 2. A computer system as claimed in claim 1, further
 comprising a runtime engine for deploying said runtime
 contract.

3. A computer system as claimed in claim 1, wherein said
runtime contract comprises a messaging requirement contract.

4. A computer system as claimed in claim 1, wherein said runtime contract comprises a transactionality requirement contract.

5. A computer system as claimed in claim 1, wherein said runtime contract comprises a security requirement contract.

6. A computer system as claimed in claim 1, wherein said runtime contract comprises a recoverability requirement contract.

7. A computer system as claimed in claim 1, wherein said runtime contract comprises a completion requirement contract.

8. A computer system as claimed in claim 7, wherein said runtime contract comprises a completion requirement contract specifying transactional behaviour.

9. A computer system as claimed in claim 7, wherein said runtime contract comprises a completion requirement contract specifying compensation behaviour.

10. A computer system as claimed in claim 1, wherein said runtime contract comprises at least one of a reliability, availability and serviceability requirement contract.

11. A computer system as claimed in claim 1, wherein said runtime contract comprises a quality of delivery requirement contract.

5 12. A computer system as claimed in claim 1, wherein said runtime contract comprises at least one of a priority requirement and a response goal requirement contract.

10 13. A computer system as claimed in claim 1, wherein said runtime contract comprises a performance requirement contract.

14. A computer system as claimed in claim 1, wherein said quality of service specification is stored in a repository.

15 15. A computer system as claimed in claim 1, wherein said quality of service specification is stored in a tagged markup language.

20 16. A computer system as claimed in claim 15, wherein said tagged markup language is XML.

25 17. A computer system as claimed in claim 1, wherein said quality of service specification is stored in a modelling language.

18. A method for component-based processing, said method comprising the steps of:

specifying a component;
specifying a control flow;
5 specifying a data flow;
specifying a resource; and

deriving a quality of service specification by
implication from relations between components, control flows,
data flows and resources;

10 wherein said quality of service specification is made
available to a runtime engine for deployment as a runtime
contract in a runtime processing environment.

15 19. A method as claimed in claim 18, further comprising the
step of deploying said runtime contract by a runtime engine.

20 20. A method as claimed in claim 18, wherein said runtime
contract comprises a transactionality requirement contract.

21. A method as claimed in claim 18, wherein said runtime
contract comprises a security requirement contract.

22. A method as claimed in claim 18, wherein said runtime
contract comprises a recoverability requirement contract.

23. A method as claimed in claim 18, wherein said runtime contract comprises a completion requirement contract.

24. A method as claimed in claim 23, wherein said runtime contract comprises a completion requirement contract specifying transactional behaviour.

25. A method as claimed in claim 23, wherein said runtime contract comprises a completion requirement contract specifying compensation behaviour.

26. A method as claimed in claim 18, wherein said runtime contract comprises at least one of a reliability, availability and serviceability requirement contract.

27. A method as claimed in claim 18, wherein said runtime contract comprises a quality of delivery requirement contract.

28. A method as claimed in claim 18, wherein said runtime contract comprises at least one of a priority requirement and a response goal requirement contract.

29. A method as claimed in claim 18, wherein said runtime contract comprises a performance requirement contract.

30. A method as claimed in claim 18, wherein said quality of service specification is stored in a repository.

31. A method as claimed in claim 18, wherein said quality of service specification is stored in a tagged markup language.

32. A method as claimed in claim 31, wherein said tagged markup language is XML.

33. A method as claimed in claim 18, wherein said quality of service specification is stored in a modelling language.

34. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 18.

35. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 19.

36. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 20.

37. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 21.

38. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 22.

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39. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 23.

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40. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 24.

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41. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 25.

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42. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 26.

43. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 27.

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44. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 28.

45. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 29.

46. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 30.

47. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 31.

48. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 32.

49. A computer program comprising computer program code to, when loaded and executed on a computer, cause said computer to perform the steps of a method as claimed in claim 33.